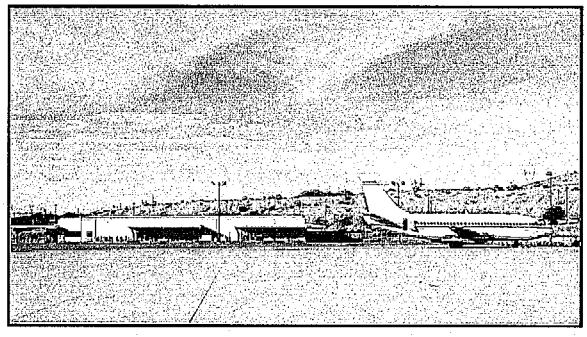
Chapter Four
DEVELOPMENT ALTERNATIVES

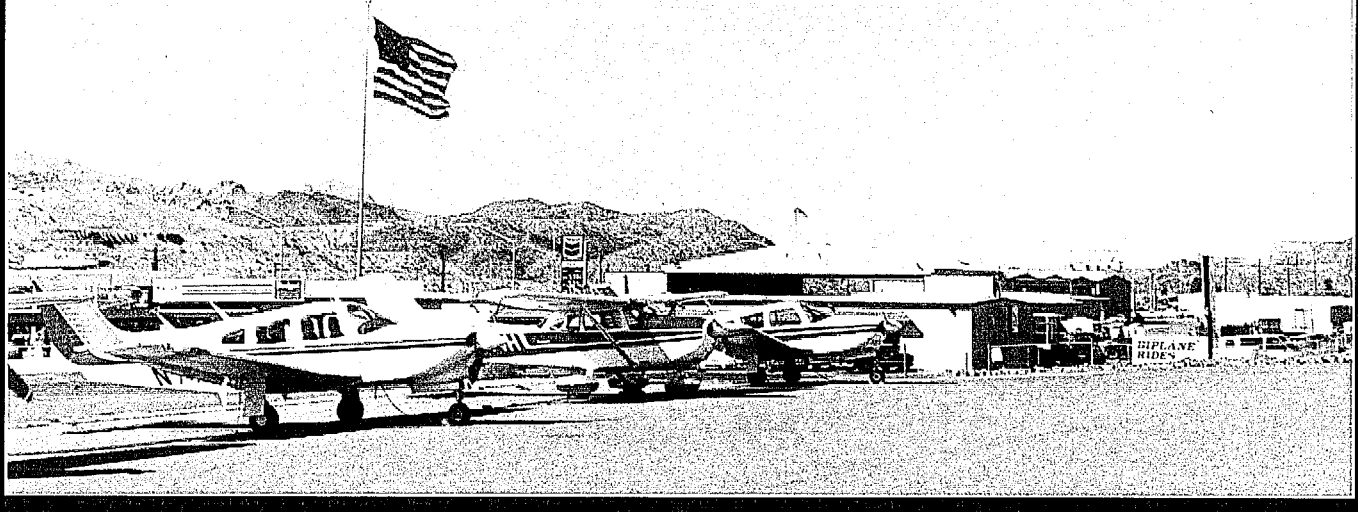
DEVELOPMENT ALTERNATIVES

The previous chapters have focused on the available facilities, the existing and potential future demand, as well as quantifying the level of facilities that are needed both now and in the future. The purpose of this chapter is to formulate and examine rational airport development alternatives that can address the planning horizon demand levels. Because there are literally a multitude of possibilities and combinations thereof, intuitive judgement is necessary to focus in on those opportunities which have the greatest potential for success.



Three major functional areas must be considered in the formulation of alternatives at Laughlin/Bullhead International Airport. These include the airfield, the passenger terminal, and the general aviation facilities. In addition, operational support facilities and surface access for all these functions must be considered. The interrelationships of these functional areas require that they be evaluated both separately and as a whole to ensure the most functionally efficient, cost-effective and environmentally compatible plan is derived. With this information, as well as the input and direction from government agencies, airport users, and other local stakeholders, a basic airport concept can evolve into a realistic development plan.

Prior to presenting the development alternatives, it is helpful to first review some of the important developments since the last master plan which was completed in 1994. Recounting recent



major improvements can help to identify current issues for this alternatives evaluation.

Previous planning efforts have also considered the no action alternative as well as relocating the airport or transferring services to another existing airport. These alternatives and why they are still not prudent or feasible will be summarized in one of the sections that follow. This will be followed by a summary of the current issues that need to be addressed and the alternatives analysis.

REVIEW OF 1994 MASTER PLAN

The **1994 Airport Master Plan** examined the alternatives for future expansion of the airfield, passenger terminal, and general aviation facilities. At that time, the runway had just been widened to 150 feet and the current terminal building was in operation. Passenger activity was approaching 100,000 enplanements annually, with forecasts for 874,000 enplanements by 2015. A temporary air traffic control tower was activated just prior to last Master Plan. Annual operations were 48,000 annually in 1993 and forecast to grow to 152,000 by 2015.

The major recommendations of the 1994 plan included extending Runway 18-36 1,000 feet south and installing a Category (CAT) I instrument approach from the south. A 4,700 foot parallel general aviation runway was planned 700 feet east of the existing runway and south of the terminal apron. The general aviation facilities were planned to be moved to the east side of the airport. The passenger terminal was planned to be relocated to the west side of the airport after raising the grade on the west side. At that time, the terminal ramp would be converted to general aviation use and the existing terminal building would be converted to airport administration and maintenance.

Over the past five years, several of the Master Plan's improvement recommendations have been undertaken at Laughlin/Bullhead International Airport. Since the Master Plan, property has been acquired in the south approach that protects and controls the approach that would be associated with a 1,000 foot runway extension. A hill in this area was lowered to meet climb-out performance requirements for commercial jets aircraft.

Another of the key recommendations from the Master Plan was to relocate the general aviation area from the west side of the airport to the east side. This is currently underway. The development of a private industrial park immediately east of the airport, however, has reduced the amount of depth available for east side development. The property between the runway and the industrial park has been acquired, and a general aviation ramp and service road have been constructed. Several hangars have already been relocated from the west side as well. A second phase of the ramp is currently under preliminary design. The permanent air traffic control tower is currently being developed on a parcel near midfield, south and east to the general aviation ramp. A new fuel farm

site has been established on the east side immediately south of the existing passenger terminal ramp.

NON-DEVELOPMENT ALTERNATIVES

Non-development alternatives include the "No Action" or "Do Nothing" alternative, transferring service to an existing airport, or developing an airport at a new location. Previous planning efforts extending back to the decision to develop an air carrier runway on the current site have considered these alternatives. All have resulted in the same conclusion: continue to develop the existing airport site to meet the needs of the Laughlin/Bullhead City area.

The "No Action" alternative has been found to result in adverse economic, social, and even environmental impacts. This alternative would result in the a substandard aviation facility that would not meet the needs of the area. The airport was developed to attract visitors and business to the Mohave Valley area. With a potential to increase passengers ten-fold and more than double operations and based aircraft, a plan is necessary that can respond to these needs as they evolve over time.

Failure to provide an adequately-sized terminal would likely result in ground delays, passenger inconveniences, and an inability to meet the demand for air carrier transportation. The ability to reach longer range destinations will become more essential for the area to maintain and expand its tourism and gaming market capture. Meeting the general aviation needs further improves the attractiveness for tourism and other business and economic development in the area. Planning for adequate operational capacity ensures efficient and safe airfield operations. Improved instrument capability will also improve safety as well as decrease the inconvenience and cost of delays associated with flight delays and cancellations due to weather.

Considering the investment that has been made in the Laughlin Bullhead International Airport over the last decade, the "No Action" alternative is an inconsistent choice for the ongoing development of the community and region. The "No Action" alternative would also be inconsistent with the goals and objectives of the Bullhead City General Plan. Objective 23:10 states, "Encourage the expansion of the Laughlin-Bullhead International Airport facilities". In this regard, the "No Action" alternative is still not considered a prudent or feasible alternative.

Transferring service to another airport has also been considered in the past. This has considered both transferring services to an existing airport and developing a new airport. An extensive site selection process was conducted in the 1980's that involved consideration of existing airports and new sites in the tri-state area. It was found that there were no existing airports within reasonable drive time that could provide the level of service that would be needed to serve the Mohave Valley area.

The site selection process in the 1980's came to the conclusion that the airport would best serve Laughlin/Bullhead

City at the site it is currently located. The costs associated with developing a new airport would essentially be more than duplicating what has been accomplished in the last decade. In addition, any other site would not provide the unique convenience for gaming, tourism, and business that the present airport provides.

Given the major investment in the existing facilities at Laughlin/Bullhead International Airport, relocation to another location is neither prudent or feasible considering the existing airport location has the capability to accommodate future demands with far less duplication of capital improvements and with far more convenience.

ISSUE CONSIDERATIONS

The basic issues to be considered in the alternatives analysis have not changed significantly from the last master plan. Some of the circumstances, however, have changed. The primary issues in the last Master Plan included planning sufficient runway length, improving weather minimums, and ensuring adequate operational capacity would be available. On the landside, primary issues included planning for adequate facilities to accommodate growing numbers of airline passengers and general aviation activity.

Exhibit 4A outlines the key considerations for this alternatives analysis. The facility requirements indicate that an ultimate runway length of at least 9,000 feet should be considered. As indicated in the previous Master Plan, any extension of the runway will need to be to the south. An extension to the north would require the relocation of Bullhead Parkway and would encroach upon the Lake Mead National Recreation Area. In addition, an extension to the north would make it more difficult to abide by the agreement between the FAA and the National Parks Service for overflights of the Lake Mead National Recreation Area. Therefore, the alternatives should focus on an extension to the south.

A single runway will not provide adequate capacity in the future so a parallel runway that can accommodate the majority of general aviation aircraft as well as some commuter aircraft should be considered. The parallel runway will need to be separated at least 700 feet from the primary runway. The previous Master Plan had recommended that the parallel runway be developed on the east side of the primary runway, however, circumstances have changed and this siting needs to be readdressed.

To coincide with the runway development the parallel taxiway system will need improvements. The taxiway circulation system will need to serve two runways as well as any runway extensions. In addition high speed exits are recommended for the primary runway to improve long range efficiency. Finally, holding aprons or bypass taxiways should also be considered near the runway thresholds.

The plan should also accommodate an instrument approach with Category I minimums. With the closest weather reporting over 90 miles away, an automated weather station such as an

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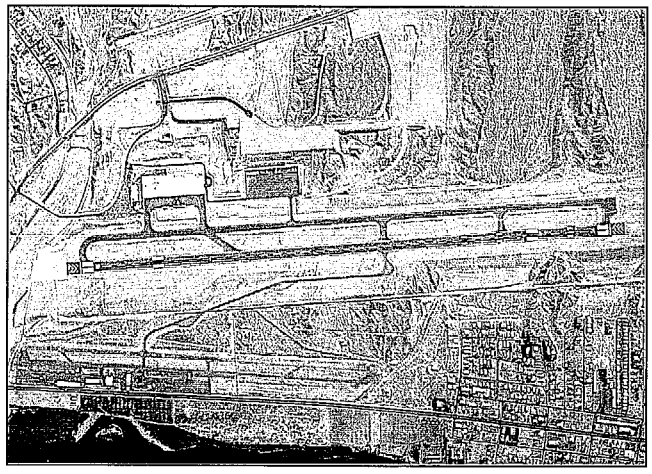
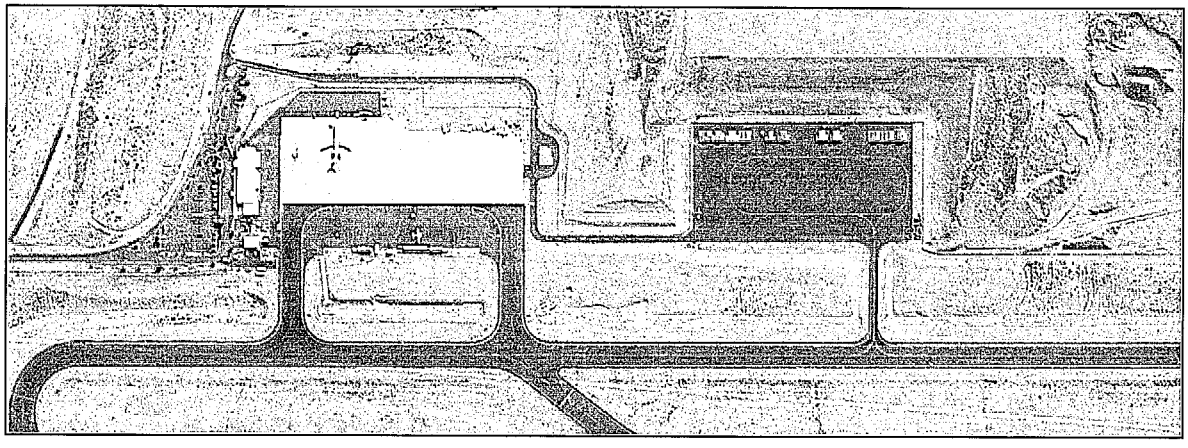
AIRFIELD CONSIDERATIONS

- Runway length adequate to accommodate longer trips and year-round commercial flights
- Parallel general aviation runway
- Category I approach minimums
- Taxiway circulation and high speed exits
- Automated weather reporting



LANDSIDE CONSIDERATIONS

- Passenger terminal area suitable for long range growth
- General aviation area suitable for long range growth
- Southern point of access for east side
- Increase revenue support opportunities



LAUGHLIN BULLHEAD INTERNATIONAL Airport

Exhibit 4A
INITIAL DEVELOPMENT
CONSIDERATIONS

ASOS or an AWOS-3 should also be included in the planning.

The passenger terminal area should have the capability to be expanded to accommodate at least the long range planning horizon of 350,000 annual enplanements. This would involve a 90,000 square foot terminal building, with gates for four commercial jets and three commuters. Terminal parking for the public, rental car, and employees should total at least 700 vehicles. The ability of an alternative to be expanded beyond this criteria would be a plus.

Based upon the recommendation of the previous Master Plan, the Airport Authority is in the process of transitioning the general aviation facilities to the east side of the airport. This will significantly improve access and efficiency for the general aviation users of the airport. To plan for the demands that will be experienced within the long range planning horizon, the general aviation terminal area will need to grow in several components. This should include hangar positions for at least 106 aircraft and approximately 96,000 square yards of apron to accommodate up to 202 aircraft on the ramp. In addition, space should be provided for an 11,000 square foot general aviation terminal area, and for 23,000 square feet, of aircraft maintenance hanger. If general aviation development is to continue along the east flight line, consideration should also be given to providing a second access point farther south.

A final consideration is maximizing the ability of the airport to remain self-sustaining. Alternatives should be considered that are not only cost effective, but that can increase the revenue potential for the airport. A strong revenue capability will help to ensure that the airport does not become a burden on the local taxpayers.

DEVELOPMENT ALTERNATIVES

The considerations discussed above resulted in the formulation of three basic airport development alternatives. The first alternative is derived from the recommended concept of the previous Master Plan with adjustments for changes in facility requirements and changes in the environs that have occurred since the last Master Plan. The other two alternatives considered variations in the placement of the parallel general aviation runway and the passenger terminal. The three alternatives are presented and discussed in the following subsections and exhibits.

DESCRIPTION OF ALTERNATIVES

As indicated above, **Alternative I** is based upon the previous Master Plan concept. This alternative is depicted on **Exhibit 4B**. As recommended in the last Master Plan, Alternative I includes a 1,000 foot southerly extension to Runway 16-34 and locates the parallel runway on the east side of the primary runway. While the east side is converted to general aviation uses.

The passenger terminal is relocated to the west side of the airfield. Under this

concept the commercial passenger terminal would be designed to conform with the sloping terrain to be a multi-level terminal with a parking structure. This would leave a portion of the remaining area on the west side to be developed for revenue support.

The east side would be converted to general aviation, with the current passenger terminal being converted to a general aviation terminal and the existing air carrier ramp becoming a transient ramp. Several general aviation parcels could be developed to front this ramp, but additional general aviation facilities would still need to be developed to the south along the flight line as well.

Alternative II considers a longer extension to provide a runway length of 9,000 feet. This alternative also sites the parallel runway on the northwest side of the airport. All landside facilities would be maintained on the east side of the airfield. **Exhibit 4C** depicts this alternative.

Alternative II examines developing new passenger terminal facilities on the southeast side of the airport. This area would be accessed from a new roadway that would be developed from Bullhead Parkway. The terminal could be developed with second level boarding in a linear concept.

General aviation would expand into the current passenger terminal and apron. The GA area would still need to be expanded as demand warrants. Under this alternative, the apron would be extended to the west towards the runway and additional hangar facilities would be developed southward towards the new terminal. An on-airport circulation road would connect the two areas.

Alternative III is depicted in **Exhibit 4D**. This alternative considers an even longer runway extension of 2,500 feet to achieve a length of 10,000 feet. This would accommodate most longer haul flights even in the summertime. It would also maximize the potential for use by international charter flights in the long range. While a demand for this length is not currently justified, this alternative does help to evaluate the potential for even accommodating a runway of this length at Laughlin/ Bullhead International Airport.

Alternative III examines another west side location for the parallel general aviation runway. Under this scenario, the runway would be sited further to the south.

As with the previous alternative, the general aviation and passenger terminal facilities would be maintained on the east side of the airfield in Alternative III. This scenario, however, evaluates maintaining the passenger terminal facilities at the north end to utilize the existing ramp. A new, larger terminal would be constructed on the east side of the terminal ramp, but most of the current facilities (parking lot, terminal building, etc.) would also continue to be utilized for other terminal area functions.

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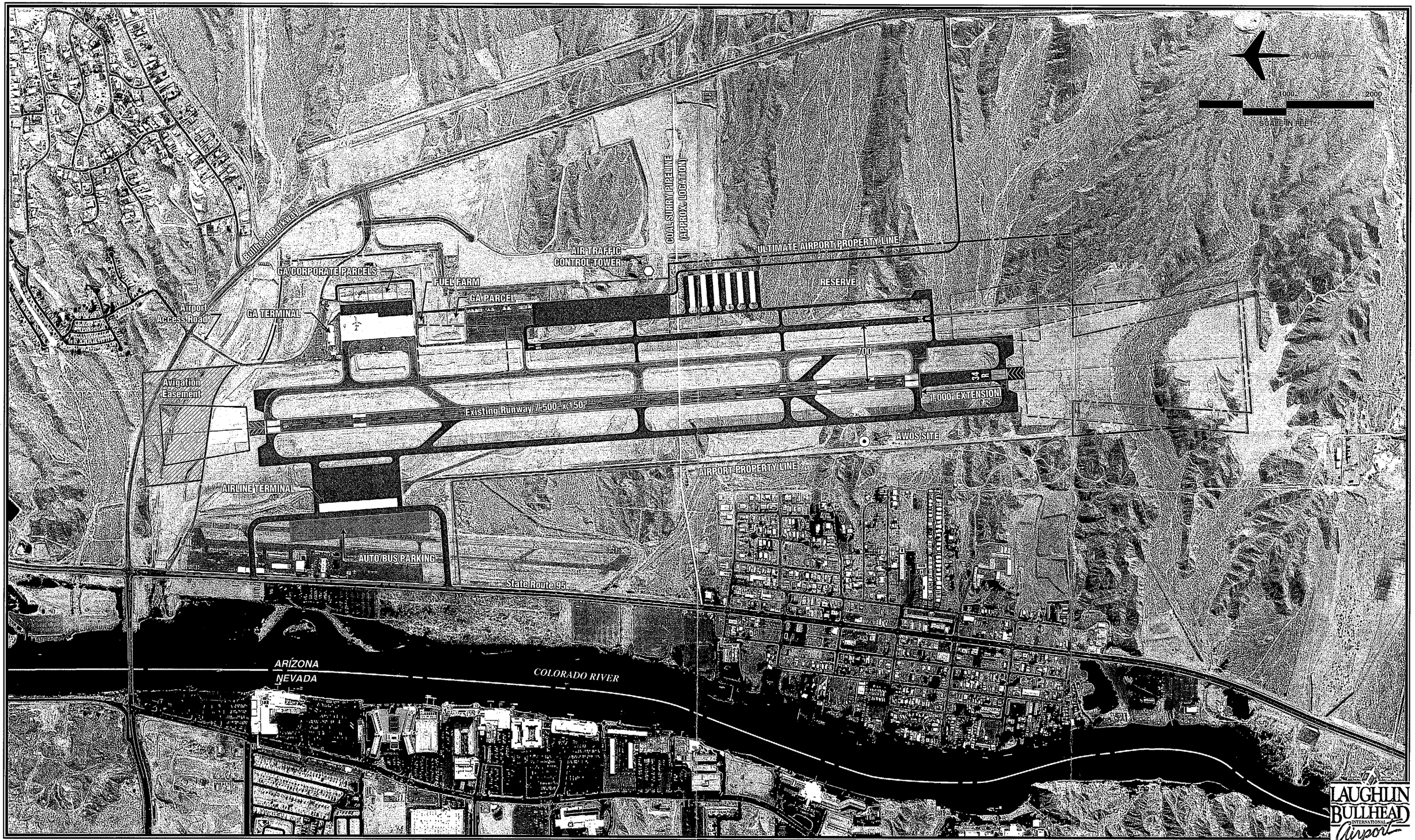

LAUGHLIN BULLHEAD INTERNATIONAL Airport

Exhibit 4B
AIRFIELD ALTERNATIVE I

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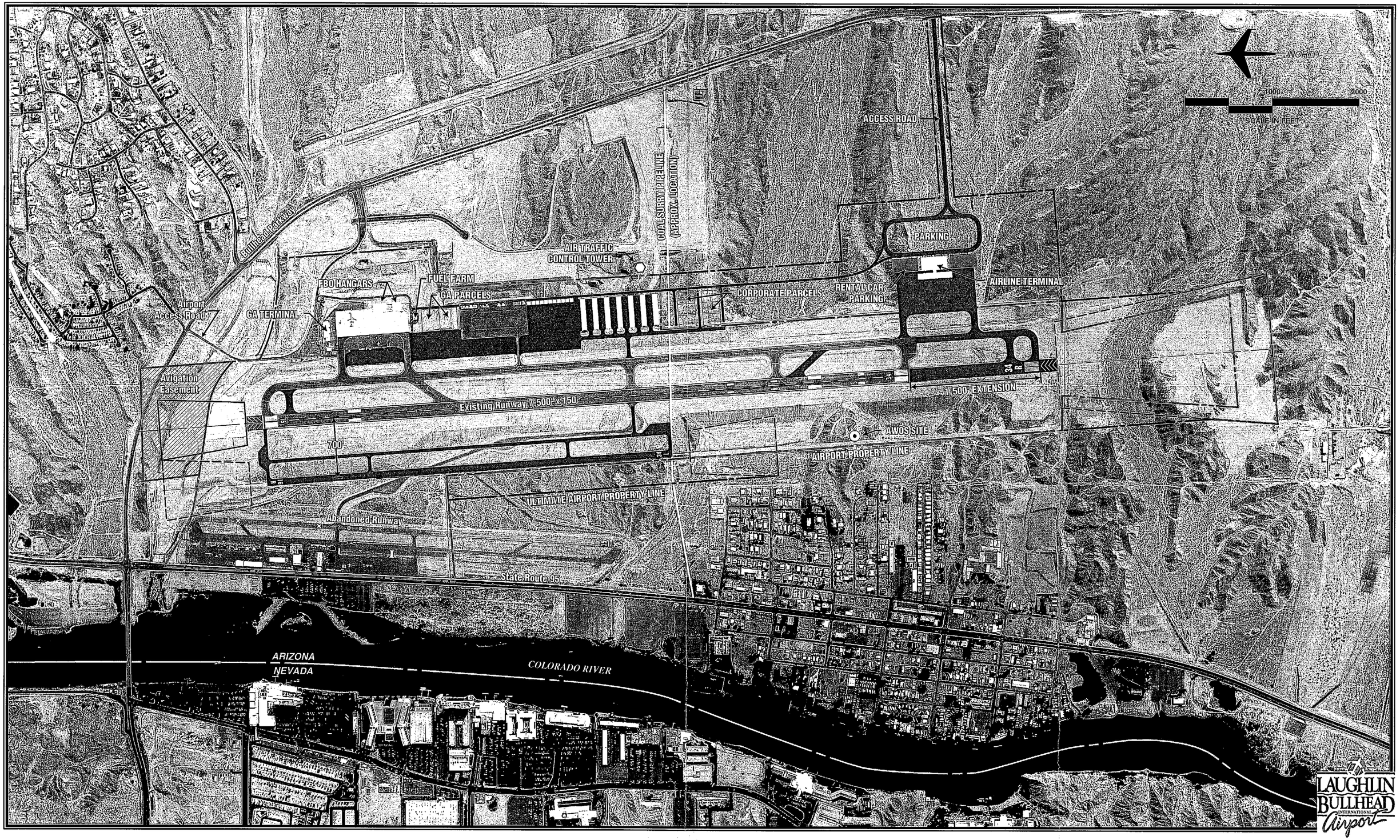

LAUGHLIN BULLHEAD INTERNATIONAL Airport

Exhibit 4C
AIRFIELD ALTERNATIVE II

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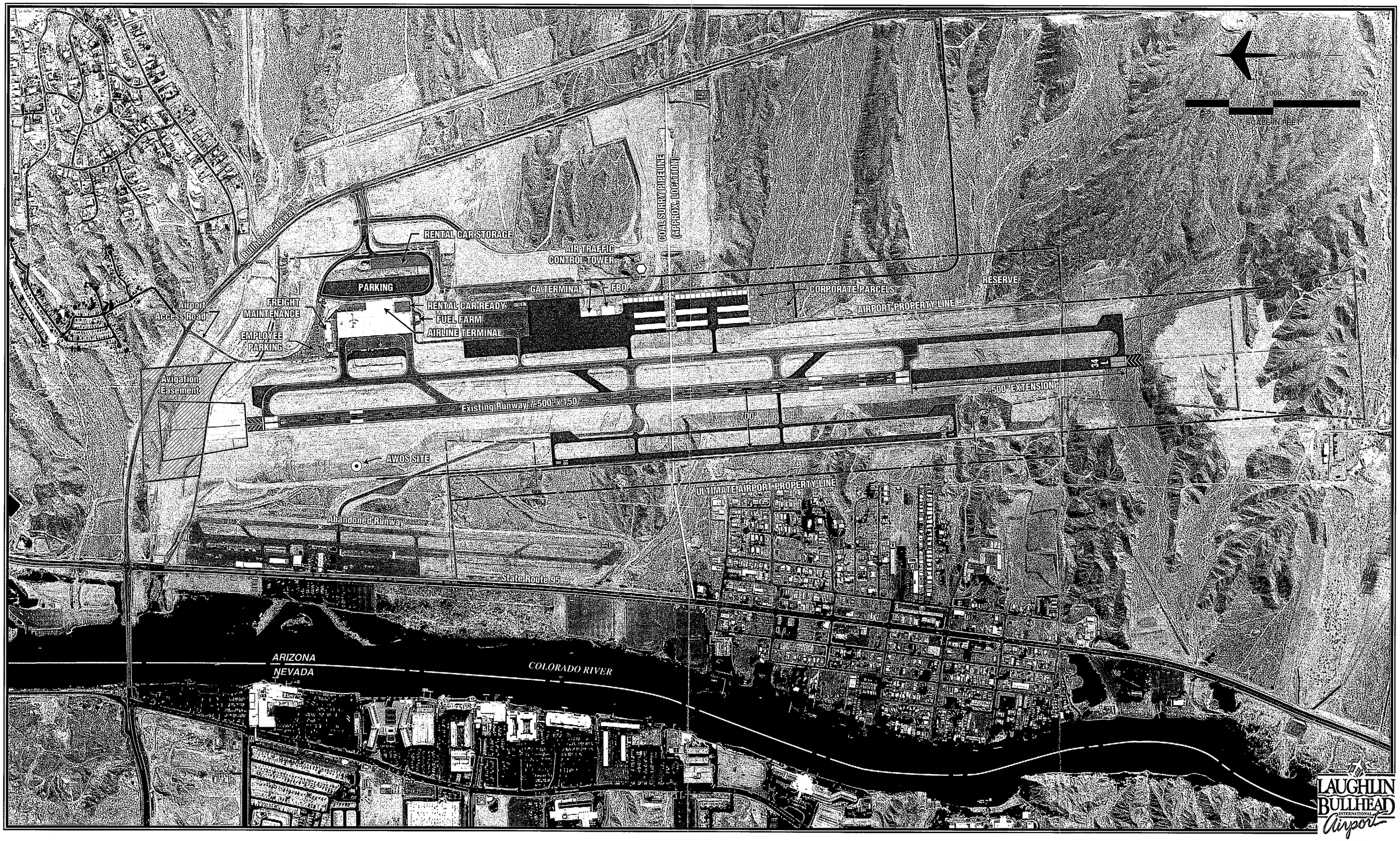

LAUGHLIN BULLHEAD INTERNATIONAL Airport

Exhibit 4D
AIRFIELD ALTERNATIVE III

RUNWAY EXTENSION EVALUATIONS

Alternative I

Most of the property for the 1,000-foot runway extension depicted in Alternative I has already been acquired. The controlled area should be widened to at least meet the dimensions of a Category I runway protection zone (see Table 3G). This would involve acquisition of approximately 12 more acres. The 1,000 foot extension would have off-site obstructions to the 50:1 approach surface, but it does appear that a 34:1 surface would be clear. Thus an aeronautical study by the FAA would be necessary to determine if Category I minimums are feasible. The City of Bullhead City does have height zoning in place based upon the 50:1 approach to the 1,000 foot extension as presented in the previous Master Plan. The 1,000 foot extension does not achieve the minimum runway length of 9,000 feet recommended in the facility requirements of Chapter Three. This would have the greatest effect on longer haul flights (greater than 1,500 miles) and summertime flights.

The 1,000-foot extension was also considered and incorporated into the F.A.R. Part 150 Noise Compatibility Plan. While the extension would slightly increase noise exposure south of the airport and decrease it slightly north of the airport, there would be no residences or noise sensitive uses within the 65 DNL contour. The noise contours will be reviewed as part of the environmental evaluation of the recommended Master Plan concept and will be included in an Appendix of the Master Plan.

Alternative II

This 1,500-foot extension to Runway 16-34 provides the minimum runway length recommended by the facility requirements. This would provide for 2,000 mile stage lengths except during the summer months. A few of the newer aircraft models would also be able to travel 2,000 miles in the summer. An additional 30 acres of property would need to be acquired to control the RPZ for a Category I approach to Runway 34. The longer extension would also have several obstructions to the 50:1 approach, but a 34:1 approach would be clear, so an aeronautical study would be necessary to ensure adequate minimums could be obtained. It should be noted that the current height zoning ordinance may need to be revised for any extension longer than 1,000 feet.

The 1,500-foot extension would result in the extended runway safety area reaching into the wash located beyond the south end of the runway. This will require some grading and re-channelizing within the wash, similar to what has been done off the north end of the runway.

As with the 1,000-foot extension, the noise exposure could be expected to increase slightly more to the south as approaches would be slightly lower, and decrease to the north as departures would be higher. Still, no noise sensitive uses are anticipated to be within the 65 DNL contour. The noise

contours will be reviewed as part of the environmental evaluation of the recommended Master Plan concept and will be included in an Appendix of the Master Plan.

Alternative III

A 2,500 foot extension would provide a length of 10,000 feet. This would accommodate a wide range of potential flight destinations from IFP. Approximately 77 acres of property would need to be acquired for this runway extension and the runway protection zone. Of course, a 2,500 foot extension would be even closer to the obstructions noted for the shorter extensions. The 34:1 approach surface would be penetrated by several natural and terrain obstacles that would need to be addressed in an aeronautical study. An option may be to displace the landing threshold on Runway 34. As with the other alternatives, the current height zoning ordinance may need to be revised for any extension longer than 1,000 feet.

Alternative III would require significantly more grading than the shorter extensions. In addition, the pavement would extend into the wash off the north end of the runway, while the safety area would extend beyond the wash. This would require the wash to be channeled either under or around the runway and parallel taxiway extension.

The longer extension would also increase noise exposure south of the airport, while reducing it over areas to the north. It is not anticipated that any noise sensitive areas would be within the 65 DNL. The noise contours will be reviewed as part of the environmental evaluation of the recommended Master Plan concept and will be included in an appendix of the Master Plan.

PARALLEL RUNWAY EVALUATIONS

Alternative I

The east side parallel runway as proposed in this alternative would have the advantage of being directly adjacent to the general aviation area. Aircraft would not have to cross the primary runway to use the parallel, thereby increasing the use of the parallel runway. Conversely, all airport traffic patterns are located to the west of the airport. This is done, in part due to the rising terrain east of the airport. An east side traffic pattern would need to be established for an east side parallel runway to be effective for training and other touch-and-go traffic. If all traffic patterns were to continue to be maintained on the west side, the parallel runway would not be effective as a training runway.

The development of an east side parallel runway would require the acquisition of additional property on the west side. A minimum of 53 acres would need to be acquired for the east side parallel runway.

Since the last Master Plan, a business/industrial park has been approved and started between the airport and Bullhead Parkway. This has significantly reduced the depth of frontage available along the east side of the airfield. Adding the parallel runway

to this side of the airfield further reduces the depth available for general aviation development. In fact, a significant portion of the existing east side general aviation ramp would lie in the RPZ of the parallel runway and would be essentially left unusable. Thus, development would need to be extended in a narrow envelope of available space along the flight line. More depth would be available along the southern half of the airfield. An additional 32 acres would be recommended for acquisition for general aviation development along the east side.

Alternative II

Under this alternative, the parallel runway is located 700 feet to the west side of Runway 16-34 with the north threshold aligned with the Runway 16 threshold. This would maximize the use of existing airport property for the runway development, although an additional 26 acres would need to be acquired along the southwest side of the parallel runway. This location also utilizes the earthwork that has already been done on the northwest side of the airfield.

The west side location is not immediately adjacent to the general aviation facilities on the east side of the airfield. This means that aircraft will have to cross the parallel runway to utilize the primary runway. While this may not be as ideal as having the general aviation facilities immediately adjacent, it is still quite workable. In fact, with all airport traffic patterns already established to the west side of the airport, a west side parallel runway would be more advantageous for training activity. Touch-and-go traffic could utilize the west parallel and the traffic pattern without affecting itinerant traffic on the primary runway.

While less departures may be assigned to an west side parallel, slower arriving propellor traffic could be still be directed to the parallel to allow simultaneous arrivals by faster jet traffic on the primary runway. Thus, an west side parallel runway will be efficient and will provide a safer operational pattern within the context of the existing traffic patterns at Laughlin/Bullhead International Airport.

Because the parallel runway will be utilized almost exclusively by propellor aircraft, it will not generate a significant noise footprint. Its primary effect will be to widen the airport's noise exposure contour in the vicinity of the runway. The location as proposed by Alternative II places the parallel runway closer to Lake Mead National Recreation area than the other two alternatives. This location would also be more likely to result in overflights of the residential areas located in the Old Bullhead area than the other two alternatives.

The parallel runway in this scenario would reduce the amount of airport property available for landside development on the west side. A west side terminal would not fit, nor would it be functional with a west side parallel runway. There would be approximately 700 feet of depth available for development along State Route 95.

Alternative III

This alternative still maintains the parallel runway on the west side, but shifts it to the south. This would require more property acquisition (49 acres) and more earthwork than Alternative II. The location of the parallel runway could potentially restrict the location of a glide slope for the south approach to Runway 34. This becomes less of a siting problem if Runway 34 is extended beyond 1,000 feet. Similarly, an automated weather station would need to be sited near the north end of the airfield as shown on **Exhibit 4D**, if it not co-located with the glide slope.

Like the other west side alternative, this parallel runway would not be immediately adjacent to the east side general aviation facilities, but it would fit in with the existing airport traffic patterns, enhancing safety and operational efficiency for training activity.

Used primarily by small aircraft, the parallel runway will not generate a significant noise footprint. The south location on the east side does have other overflight benefits over the more northern location of Alternative II. Overflights of the Lake Mead National Recreation Area would be at higher elevations. In fact, many aircraft may be able to turnout before even reaching the park boundaries. The runway will also be situated so that turnouts over Old Bullhead would be minimized. There will still be plenty of time and distance for south departing propellor traffic to turn left to avoid overflights of housing to the south as recommended by the Part 150 study.

Another advantage of the southwest location for the parallel runway is that it maximizes the availability of other airport property for landside uses. The entire frontage on the east side of Runway 16-34 could be reserved and developed for aviation uses. The west side property, which is at a significantly lower elevation than the airport could be converted to uses that generate revenue to support the operation of the airport. There would be over 75 acres available for support development next to State Route 95.

LANDSIDE EVALUATIONS

Alternative I

Placing the passenger terminal on the west side of the airfield would completely separate the passenger facilities from the general aviation facilities. This separation is an advantage for security, but it is less efficient for cross-utilization of airport support functions such as fueling facilities, airport maintenance and roadway systems. In addition, a west side terminal would require the ultimate development of a full length parallel taxiway along the west side of Runway 16-34 as shown on **Exhibit 4B**. This would not only add cost to the project, but could affect the placement of a glide slope antenna for an instrument landing system (ILS) approach to Runway 34.

In addition, placing the terminal building on the west side would also place all the passenger-related traffic on the State Route 95. The section of this roadway next to the airport already carries the highest average daily traffic level in Bullhead City. Development and expansion of the west side terminal will require a unique design, that will likely be more expensive than a more traditional terminal plan that can be accomplished on the east side.

The conversion of the existing terminal ramp to a corporate and transient ramp would get maximum utilization of this area. The parking lot and access roads would be more than sufficient for GA uses as well. The terminal building would readily convert to a general aviation terminal. The fuel farm would be located just across the ramp. Corporate parcels on the east end of the ramp could support maintenance and/or corporate hangers that maintain a first-class appearance for the area.

As indicated earlier, 85 acres of property on the east side of the airport is recommended for acquisition under this alternative. While 53 acres would be for the east side parallel runway development, 32 acres would be for long range general aviation development. The long narrow envelope of property available for development near midfield, would have minimal flexibility in use. This reflects in the local ramp and storage hangars that would be located in the area.

Alternative II

Alternative II relocation of the terminal to the southeast side would allow for the most flexibility in layout and design. As with Alternative I, the separation between general aviation and airline terminal areas is maximized for Part 139 security purposes. All terminal operations, however, would be located on one side of the airport to better cross-utilize support functions such as fuel storage, maintenance, ground handling.

With the relocation of the terminal, this alternative would involve the acquisition of 105 acres of property on the east side. In addition, utilities and an access road would need to be extended into this area earlier in the planning period than for the other alternatives. The access road would need to be of sufficient capacity for passenger use. The access point on Bullhead Parkway would be at an intersection already planned for signalization. The travel distance from the passenger terminal to the gaming resorts in Laughlin would be the longest of the three alternatives.

Another consideration with the south location for the passenger terminal is how it might affect runway operations. The terminal would be directly adjacent to the south end of the runway. According to the Airport Authority agreement with the National Park Service, the preferential use of Runway 16-34 is for arrivals and departures to and from the south when wind, weather, and traffic permits. A terminal at the south end would increase the taxi distances during preferential runway operations.

As with Alternative I, the existing passenger terminal area would be converted to general aviation uses. Fixed base operator (FBO) hangars and the general aviation terminal would be located at this ramp. This allow the transient ramp to focus on customer service rather than include storage of based aircraft. The based aircraft would be located further south. Expanding the ramp to the west opens up more room for storage hangars on the back side of the general aviation ramp. In this alternative, the corporate parcels are located at the south end of the general aviation area. This would provide more privacy and separation for the based corporate aircraft owners.

Alternative III

This alternative also maintains all aviation-related terminal functions on the east side of the airfield, including keeping the passenger terminal at the north end of the airport. This location minimizes the taxi distances for airlines to operate under the preferential runway use agreement. It also continues to make use of the existing ramp, with its higher pavement strengths and design standards, for commercial jets.

Exhibit 4D depicts how a 90,000 square foot terminal building, and supporting aircraft gates and auto parking could be developed at the existing ramp. This would best utilize the existing facilities by converting the existing parking lot into employee parking. A new public parking lot would need to be developed to the east adjacent to the terminal, and may require terracing. The ramp could be expanded slightly to reduce the amount of cut needed to the east.

The airport access points for the terminal would remain the same, but they would need to be upgraded as traffic increases. This has the advantage of maintaining the proximity to the Laughlin gaming resorts.

Separation of the passenger terminal from general aviation area is not as great as for the other two alternatives, but it is still distinct. This also places the fuel storage convenient to both areas.

The general aviation area would not be as accessible under this alternative. A southern access could still be developed as shown for a secondary access to the airport, and particularly to the general aviation facilities.

The airside, however, would be most accessible for general aviation under this alternative. The general aviation terminal and FBO facilities would be at midfield. As with Alternative II, depth is added to the ramp by developing it to the west towards the taxiway. Approximately 65 acres of property would be acquired for future east landside development under this alternative.

This alternative would allow both general aviation and commercial airline activities to continue to develop in their current locations, and at less development costs than the other two alternatives. Perhaps the greatest potential drawback to this alternative would be the expansion capability of the passenger terminal beyond the log range

planning horizon. Expansion of the ramp would need to be to the south, and would require relocating the fuel farm. Even with the fuel farm relocation, the ramp would be limited to an additional 500 feet before encroaching upon the general aviation area.

SUMMARY

The process utilized in assessing the airfield and landside development alternatives involved consideration of short and long term needs as well as future growth potential. Current airport design standards were considered in every scenario. Safety, both air and ground were given high priority in the analyses as was potential effects on the environment.

The recommended development concept for Laughlin/Bullhead International Airport must represent a means by which the airport can grow in a balanced manner to accommodate the planning horizons. In addition the plan must provide the flexibility to meet activity growth beyond the long range planning horizon.

Through further meetings and discussions with the Planning Advisory Committee, the Airport Authority staff, as well as the general aviation users and the public, a recommended concept evolved. The plan represents a means by which the airport can continue to effectively serve the aviation needs within the overall operation and development of the airport. This will further evolve into a plan for maintaining and improving facilities to meet future demand challenges.